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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

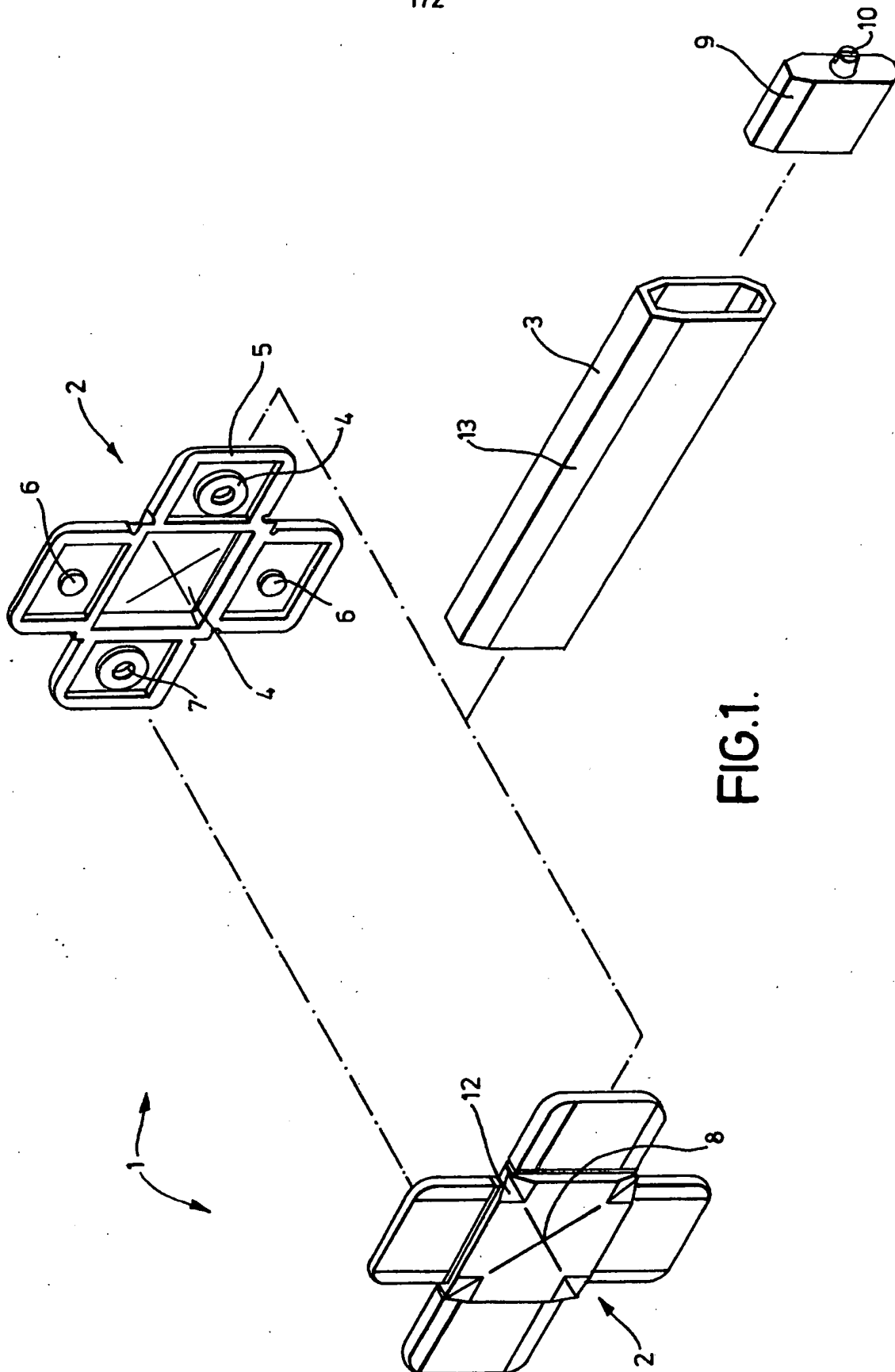


FIG. 1.

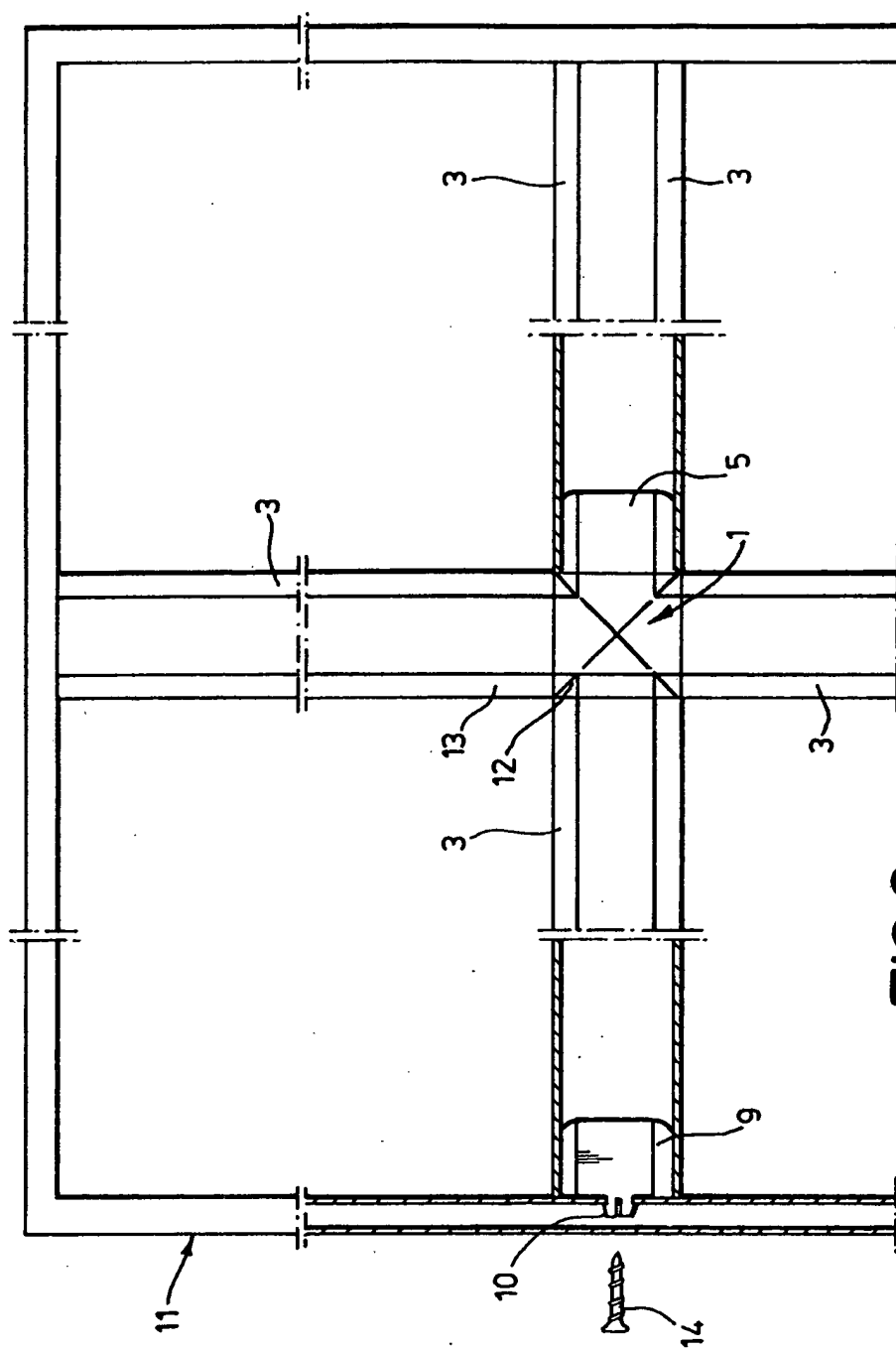


FIG. 2.

SPECIFICATION Windows

This invention relates to windows, and is particularly concerned with parts for use with double glazing units.

Windows of the so-called "Georgian" type have become increasingly popular over recent years. Such windows comprise a plurality of relatively small panes within a lattice or matrix framework contained within a larger window frame. Georgian type windows can suffer from various disadvantages. For example, single glazed windows tend to let in draughts, due to the relatively large number of joints in the lattice or matrix framework. Also, where such framework is of wood, a considerable amount of materials and labour is involved in painting the same. Using small sealed double glazing units in place of single panes does not overcome such problems, and is very expensive.

Some attempts have been made to overcome these problems by introducing into a relatively large double glazing unit a matrix of decorative bars, to simulate the appearance of a Georgian window. However, to our knowledge, none of the previously proposed systems has been very effective, in providing an aesthetically pleasing appearance. For example, where the matrix contacts the glazing, undesirable black lines may appear (the matrix is typically white). Also, joints between the various parts of such a matrix may be obtrusive.

Certain embodiments of the present invention aim to provide decorative members for use within double glazing units, which may be improved in the foregoing respects, and which may be used to provide a double glazing unit having the aesthetically pleasing appearance of a Georgian type window, without the usual disadvantages.

More generally, according to a first aspect of the present invention, there is provided a decorative member for use within a double glazing unit, the member being formed with a point contact means such that any contact with glazing of such a unit is made as a point contact.

Preferably, the member is a cross-member for forming a joint between at least two, and preferably four, bars.

The said point contact means is preferably formed as a projection of pyramid or conical form. Preferably, said point contact means is provided on each of two opposite sides of the decorative member.

According to a second aspect of the present invention, there is provided a decorative member for use within a double glazing unit, the member comprising two identical halves which are secured together.

Preferably, said halves are secured together by a press-fit, and each half is formed with complementary projections and recesses, such that each projection on one half engages a respective recess on the other half. The said halves are preferably moulded of plastics material.

The decorative member is preferably a cross-member for forming a joint between at least two, and preferably four bars. Then, each said half has a plurality of tongues each for engaging within a respective end of a hollow bar. The tongues preferably each have a width corresponding substantially to the width of a respective side of the cross-member. Then, when said halves are secured together with the tongues within respective ends of four hollow bars the joint between the said halves may be substantially hidden from view.

In a third aspect, the invention provides a decorative matrix for use within a double glazing unit, the matrix comprising bars interconnected by decorative members in accordance with the first and/or second aspect of the invention.

In a fourth aspect, the invention provides a double glazing unit provided with a decorative matrix in accordance with the third aspect of the invention, between the glazing of the unit. Preferably, the double glazing unit is a sealed unit.

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings, in which:

Figure 1 is an exploded perspective view of a decorative member in accordance with the invention, together with one decorative bar and end piece therefor; and

Figure 2 is a diagrammatic representation of part of a double glazing unit within which there is provided a matrix composed of parts such as shown in Figure 1.

The decorative member 1 shown in Figure 1 is a cross-member adapted to interconnect four decorative hollow bars 3, to form part of a matrix. The member 1 comprises two identical moulding halves 2, each of which has a centre portion 4 and four projecting tongues 5.

Each centre portion 4 is formed outwardly in pyramid shape, such that it comes to an outwardly projecting apex 8. Each of the tongues 5 extends from a respective side of the respective centre portion 4, for substantially the full width of that side. For each moulding 2, two opposing tongues 5 are provided with inwardly facing projections 6, and the other two opposing tongues are provided on the inner faces thereof with bosses 7, each of which affords a central recess complementary to the projection 6. Thus, to secure the two mouldings 2 together, the mouldings 2 are disposed with each projection opposite a respective boss 7, and then pressed together such that the projections 6 engage within the recesses in the bosses 7 in a press fit manner.

In use, each tongue 5 is engaged into a respective end of a respective hollow decorative bar 3, in a push-fit manner. Where it is necessary to secure a free end of the decorative bar 3 to a window frame, a moulded end piece 9 is inserted into a respective end of the decorative bar 3, and secured to a spacer bar of a double-glazing unit

by means of an integrally moulded spigot 10, which is formed as a resilient barb to snap engage a respective aperture in a spacer bar.

Figure 2 shows more clearly how the decorative member 1 is used. It will be seen that four decorative bars 3 are engaged with respective tongues 5 of the member 1. Because the width of the decorative bars 3 corresponds substantially to the width of the respective sides of the decorative member 1, the joint between the two mouldings 2 of the member 1 is concealed, which is particularly important from the aesthetic point of view. Moreover, the mouldings 2 are each provided with chamfered portions 12 in respective corners thereof, which portions 12 are aligned in use with corresponding chamfered portions 13 on the decorative bars 3. It will be appreciated that this further enhances the aesthetic appearance of the arrangement. Figure 2 also shows how the ends of the decorative bars 3 are secured to a spacer bar 11 of a double glazing unit by means of the end pieces 9, which are secured in position by the spigots 10, and optionally also by screws 14 which engage within the spigots 10.

It will be appreciated that the glazing unit illustrated in Figure 2 is a double glazing unit, and that the matrix built-up of the parts 1 and 3 is positioned between the glazing of the unit. Due to the pyramid form of the outer faces of the centre portions 4 of the mouldings 2, if the matrix touches the glazing of the unit, it does so only by point contacts at the apices 8. Thus, there are no unsightly optical black lines of contact between the matrix and the glazing, as is the case with previously proposed arrangements of which we are aware. In this context, it will be appreciated that, in any sealed double-glazing unit, volume contraction can occur with change of atmospheric and temperature conditions. It is important that there is no contact between apices 8 and the glazing of the unit before any contraction occurs, because of the possibility then that the glazing may crack. However, contact may possibly occur after contraction of the unit, in which case only point contacts occur, as indicated above. By way of example, the maximum width of the illustrated matrix may be 9.5 mm between opposite apices 8, the matrix being positioned in a nominal 12 mm double-glazing gap.

There may thus be provided a double-glazing unit which has the pleasing aesthetic appearance of a Georgian type window, but which does not have the disadvantages traditionally associated with windows of this type, either in previously proposed single glazing or double-glazing form. The parts 2, 3 and 9 may readily be moulded of plastics material in an economic manner, and the arrangement of the parts is such as to provide a matrix of professional appearance, in which joints are virtually undetectable.

Claims (Filed 21st July 1982)

1. A decorative member for use within a double glazing unit, the member being formed with point contact means such that any contact with glazing of such a unit is made as a point contact.
2. A decorative member according to Claim 1, being adapted to form a joint between at least two bars.
3. A decorative member according to Claim 2, being a cross member for forming a joint between four bars.
4. A decorative member according to Claim 1, 2 or 3, wherein said point contact means is formed as a projection of pyramid or conical form.
5. A decorative member according to any preceding claim, wherein said point contact means is provided on each of two opposite sides of the decorative member.
6. A decorative member for use within a double glazing unit, the member comprising two identical halves which are secured together.
7. A decorative member according to Claim 6, wherein said halves are secured together by a press-fit.
8. A decorative member according to Claim 7, wherein each half is formed with complementary projections and recesses, such that each projection on one half engages a respective recess on the other half.
9. A decorative member according to Claim 7 or 8, wherein said halves are preferably moulded of plastics material.
10. A decorative member according to Claim 7, 8 or 9, being adapted to form a joint between at least two bars.
11. A decorative member according to Claim 10, being a cross-member for forming a joint between four bars.
12. A decorative member according to Claim 10 or 11, wherein each said half has a plurality of tongues each for engaging within a respective end of a hollow bar.
13. A decorative member according to Claim 12, wherein the tongues each have a width corresponding substantially to the width of a respective side of the cross-member.
14. A decorative member substantially as hereinbefore described with reference to the accompanying drawings.
15. A decorative matrix for use with a double glazing unit, the matrix comprising bars interconnected by decorative members in accordance with any preceding claim.
16. A double glazing unit provided with a decorative matrix according to Claim 15, between the glazing of the unit.
17. A double glazing unit according to Claim 16, being a sealed unit.